



Thin Film Capacitors, the power storage of science fiction...

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Saw a fast link article on google news about [new thin film matrial for ultracapacitors on Technology Review](#) [1].

Why is this future now?

Until recently, chemical batteries are the only practical way to store energy. So if some device today was unearthed/found decades latter, the battery would not work, maybe if it was able to run totally off a solar cell it could. However ultracapacitors may be able to hold a charge for decades, or at least be able to recharge decades later from solar cells. So it is the stuff of science fiction from the last century. A material that can be used to make devices with electrical storage that will years later work, whereas if it was a convential batter that would not be so!

Interesting Understanding:

- A capacitor stores charge through separated charged particles.
- A battery stores charge through chemical changes at the electrodes.
- In October 1745, Ewald Georg von Kleist of Pomerania in Germany found that charge could be stored by connecting a high voltage electrostatic generator by a wire to a volume of water in a hand-held glass jar.
- The voltaic pile, invented by Alessandro Volta in 1800, was recognized as the first electric battery. (some think the ancient egyptians and alchemist may have know before that, aka the [baghdad battery](#) [2])

More links about [thin film carbon ultracapacitors](#) [3]:

- [Carbon properties and their role in supercapacitors](#) [4]
- [Graphene ultracapacitors](#) [5]
- [Ultracapacitors challenge the battery](#) [6]
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[1] <http://www.technologyreview.com/energy/25170/?a=f>

[2] http://en.wikipedia.org/wiki/Baghdad_Battery

[3] http://scholar.google.com/scholar?q=thin+film+carbon+ultracapacitors&hl=en&as_sdt=0&as_vis=1&oi=scholar

[4] http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TH1-4JMVHRP-3&_user=10&_coverDate=06/19/2006&_rdoc=1&_fmt=high&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1310019722&_rerunOrigin=scholar.google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=b4ddd1d2ac31d852277d64249871eeb1

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[5] <http://pubs.acs.org/doi/abs/10.1021/nl802558y>

[6] http://www.worldandi.com/subscribers/feature_detail.asp?num=23938